Uncertainty, Chaos and Learning

Prolegomenon to a Sociology of Creativity

Kupferberg, Feiwel

Publication date:
1995

Document Version
Publisher's PDF, also known as Version of record

DEPARTMENT OF DEVELOPMENT AND PLANNING
AALBORG UNIVERSITY
FIBIGERSTRAEDE 2
DK 9220 AALBORG Ö
DENMARK

ISSN 0904-8154

Uncertainty, Chaos and Learning: Prolegomenon to a Sociology of Creativity

by

Feiwel Kupferberg

DEVELOPMENT RESEARCH SERIES
DEVELOPMENT RESEARCH UNIT

TEL. +45 98 15 85 22
FAX. +45 98 15 32 98

WORKING PAPER NO. 45

MARCH, 1995

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Abstract

Creativity is mostly regarded as an esoteric topic by sociologists, resisted for methodological reasons. This view is challenged in the article, which argues that the creative phenomenon lies at the core of modernity and can help us better address several of the most hotly contested issues in sociology such as socialism versus capitalism, the role of intellectuals, marxism and the recent collapse of communism in Eastern Europe. It can also make social theory more generally fit to cope with the contemporary trends of an emerging globalized information society, by critically reviewing some of the tacit assumptions of the founding fathers of sociology, particularly the idea that social action is always prestructured and well ordered. The particular nature of creativity is precisely that it takes place in a realm characterized by uncertainty, chaos and learning rather then predictability and routinized action.

The Sociology of Creativity

Although there is a large body of literature studying the phenomenon of creativity, the sociological approach has been conspicuously missing. There are some possible exceptions, such as the hypothesis of an affinity between the position of stranger or outsider with new thinking (Veblen, 1919/73, Simmel, 1908/1969, Edwards, 1968, Coser, 1968), the idea of "cross-fertilization" (Coser, 1984, Timms, 1986) and Merton's early study on science and technology in sevententeenth century England (Merton, 1970), but the phenomenon as such has hardly attracted the sociological imagination. The tacit rule among the sociological community seems to have been: Stay out of it, it is none of our business!

In this article I will argue that it is. Far from being the esoteric topic most sociologists believe it to be, it touches upon several of the core topics of our discipline: the question of the nature of modernity, the problem of capitalism versus socialism, the role of the intellectuals, marxism, revolution, systemic transformation, the recent collapse of communism in Eastern Europe.

But I also believe that a sociological approach will bring fresh input to the research field as such, which has tended to be too narrowly defined. Most of the earlier literature was devoted to a study of the personal characteristics of the creative individual (MacKinnon, 1968, Barron, 1969, Rothenberg & Hausman, 1976, Albert, 1983) or alternatively the nature of the creative product (Koestler, 1988, Josephson, 1975). Few studies have emphasized the interactive dimensions and the sociological nature of creative activity.

The best recent account of creativity is Howard Gardner's **Creating Minds**. In this book Gardner introduces a sociological dimension admittedly missing in most previous research on creativity (Csiskszementhalyi, 1990). He suggests a model containing three elements, a) the domain in which the creative individual seeks to make a contribution, b) the field where this contribution is socially recognized and c) the personal development of the creative individual (the life-biographical dimension). Although Gardner is aware of the social framing of creativity and the social interaction involved, this latter dimension is not focused upon, as his interest clearly lies in the creative individual himself.

A sociology of creativity cannot ignore the creative individual, the biographical dimension certainly plays an important role but a sociology of creativity must be much broader. A sociologically informed study of creativity should include the subjective experience and life-worlds of creative individuals but this dimension should be contextualized in a broader framework, outlining the objective conditions and consequences of creative activity as such. What is the nature of this particular activity, which actors are involved, how do they interact?

Although this is seldom recognized, the ongoing debate in sociology on the nature of modernity and the problem of capitalism versus socialism, the role of the intellectuals and

the flaws of marxist theory is fundamentally rooted in different views of how a given institutional order copes with creativity. Although this has always been the case, our awareness of this social fact has only come to the surface in the late eighties with the emergence of a globalized information society and the abrupt collapse of communism. These two events have both in their particular ways suddenly moved the problem of creativity from the periphery of society to its very center.

My thesis is that focusing upon the conditions and role of creativity helps us better to understand contemporary modernity and at the same times helps us to "modernize" social theory, by making it more "up to date" with current realities in a world which has lost most of its previous illusions and where the emergence of a globalized information society has made much of previous social thinking look increasingly anachronistic.

Uncertainty, Chaos and Learning

There are no doubt many types of creativity: artistic, scientific, technological, entrepreneurial, political etc. These different branches outline the possible domain of a general sociology of creativity but they do not as such indicate what creative activity is or how it can be defined. Artistic creativity is mostly involved with problems of anticipating real experience (Duvignaud, 1972, Wilson,1986), scientific creativity is occupied with the problem of discovery (Kuhn, 1970, Root-Bernstein, 1989), political creativity tries to cope with the new (Leggewie, 1994) etc. Is it possible to "distill" a core definition of the phenomenon in question out of this immense variety of creative outbursts?

The most important dimension of creative activity, seen from a sociological point of view are not singular artifacts, such as a famous sculpture or painting, an ancient epos, a philosophical discourse etc. but the type of social activity and interaction involved in the process of creation. What kind of process is it and how can it be defined? I would suggest that the different forms of creativity mentioned above can be seen as a variation of a common theme, the problem of coping with uncertainty or the unknown.

The core of a sociology of creativity could be outlined as the problem of how systems and actors cope with the unknown, not only through the "structuration" (Giddens, 1984) of more or less routinized social interactions and emotional bonds , but also through "destructuration" and "restructuration" of existing routines, in a more or less disorderly way.

More precisely, I will suggest the following sociological definition of creative activity:

Creativity is that part of human activity which is particularly oriented towards coping with the unknown. Creativity encompasses structuration, destructuration and restructuration of routines in a more or less disorderly way. Creativity is the critical aspect of a broader process of social learning taking place among systems and actors, as these try to adapt to the changing conditions of modernity.

This is a definition which is broad enough to encompass all the different branches of creative activity (which do not have to be specified in such a definition, as this should be left open for the sociological imagination to explore). Its degree of precision lies in the attempt to put the core of creativity (coping with the unknown) into focus, while at the same time locating this activity in a particular view on human nature and the social order, rooted in the "social constructionist" tradition (Berger & Luckmann, 1967), but departing from the latter by emphasizing that the process of social construction is far from "orderly".

There is an element of chaos or disorder in any kind of creativity. Societies are partly routinized or ordered, but these everyday routines or structurations constantly break down and new routines have to be institutionalized. This element of disorder in any kind of creative activities should be put more into focus.

Sociology and Creativity

Sociology has tended to avoid the phenomenon of creativity, partly for methodological reasons. As Etzioni (1988) suggests, sociology feels awkward in the company of individual activity which seems to transcend its collective origins or assumes a "heroic" pose (Beckman, 1990). Even more important is probably the lack of theoretical taste for a phenomenon which is instinctly felt as stressing the element of "disorder" or "chaos". One of the reasons sociology has had such great difficulties incorporating this type of social activity in its conceptual framework is the traditional emphasis on "structure" and "order" in its analysis of social action (Parsons, 1968). For sociology, "disordered" or "unstructured" social activity is an "unthing". It is not recognized as a legitimate part of social reality. The idea that lack of structure or order can be "productive" in the sense that it furthers novel thinking and innovation is "bad news" (Gouldner, 1971) for sociology and hence naturally resisted. As Schutz (1973) emphathizes, "natural" thinking does not have to specify its own grounding conditions. It lacks the "self-reflexive" dimension which we normally associate with scientific thinking. The fact that few sociologists have bothered even to ponder upon why sociology shuns creativity, suggests that at least in this respect, sociology is closer to "natural" thinking.

This "negative" attitude towards admitting unstructured social activity or "creative chaos" into its midst can perhaps best be illustrated by the sociology of technology, which has traditionally focused upon problems related to the consequences of technological inventions as these are distributed throughout society. The creative activities which made these inventions possible in the first place have mostly been treated as a "black box".

One of the very few exceptions from this rule, Gilfillans **The Sociology of Invention**, did try to present a model for how technological creativity worked. But in his effort to convince a sociologically minded public of the importance of this phenomenon, Gilfillan tended to downplay the role of creative breakthroughs or originality in technological inventions to the degree where innovative activities were reduced to a mere "routine" matter.

Although there is no doubt an element of "routinization" in any institutionalization of creative activities, as predicted by Joseph Schumpeter in **Capitalism, Socialism and Democracy**, such a onesided view is not very helpful if we wish to understand what creativity is, why it is more frequent in some social and cultural contexts than others and how it helps us understand the broader phenomenon of coping with uncertainty, chaos and learning which seems to be the core of the experience we call "modernity" (Berman, 1982).

The single most important problem in the sociology of technological creativity is to explain how creative breakthroughs come about (Mokyr, 1990, Wiener,1993) and in particular how different institutional arrangements tend to further or alternatively block technological innovations and change (Rosenberg & Birdzell, 1986, Gimpel, 1975). Focusing upon the conditions of technological creativity, is very helpful in specifying the pecular nature of creative activities.

The Nature of Creative Activity

Although largely neglected by sociologists, the problem of where inventions come from and how they enter society through the world of business was introduced into economic theory by the "Austrian school" (Schumpeter & Hayek), the forerunners of the present interest in "innovation theory" (Johnson & Lundvall,1988, Lundvall & Johnson,1992). The latter emphasize the "learning" element in all innovative economic behaviour, arguing that the classical distinction, between "innovation" and "diffusion" is untenable. Much of contemporary innovation takes place due to "interaction" between users and producers. Innovative activities over longer periods of time are unthinkable without the institutionalization of such user-producer interactive activities. These in turn, become the core of larger "national systems of innovation" (Lundvall, 1992).

The concept of "national systems of innovation" has turned out to be a very complex one, involving other dimensions as well (Niovo et.al. 1993). The main hypothesis though, that inventive and innovative activities always take place in a broader social context which includes information input from the potential users, has been confirmed by other, separate studies, investigating the nature of the actual process of innovation and invention. In a study by Arthur D.Little & Company on the twelve most important postwar commercial breakthroughs - some but not all involving technological inventions - it turned out that creative activities in technology and business tend to take place inside a social framework of intensive interaction between actors (Ketteringham & Nayak, 1986). These included potential users, sailsmen, financiers, superiors and last but not least the inventors themselves.

Although the social framework of creative activities should be emphasized, it is at the same time important not to mistake creativity to be a highly organized and pre-planned activity. The opposite seems in fact to be the case. Creative activity is always unstructured or chaotic to some degree (Lundwall & Johnson, 1992) and any attempt to eliminate this element of chaos is doomed to fail. This point is emphasized by Peters & Austin (1985) who found that for new ideas to breed, the creators ("skunks") must be given a wide margin of autonomy which is difficult to combine with more conservative managerial practices. The idea that the "leader" is in full "control" of what creative individuals on the payroll of a given organization are doing is illusory and contraproductive.

One could argue that this illusion of the possibility to organize and systematically "plan" decentralized creative activities on a grand scale (Giddens, 1990) - particularly in the conditions of an emerging knowledge-based economy, where decentralized user-producer interactions profliterate and quick learning processes become necessary in order to survive in a highly competitive global environment - was the fundamental reason why the communist systems collapsed (Reissig & Glaessner, 1991, Schabowski, 1991, Merkel, 1994). Indeed there is a clear parallel between the fundamental systemic changes going on in the post-communist societies and the organizational changes which are taking place in Western societies (Toffler,1990).

These changes, indicate that we are entering an epoch of intensified but largely unplanned, social learning processes on a global scale, related to broader technological changes (Bell, 1973, Reich, 1993). These social learning processes take place on several levels, not only the national one. They involve among other things new management practices and the change of established organizational routines (Peters & Austin, 1985, Aburdene & Naisbitt, 1985), new ideas in spatial and regional planning (Anderson, 1985), changing relations between the citizens and the political class (Herles, 1994) and new thinking in international relations (Levi, 1994, Stein, 1994).

What are the consequences of such a change for a sociology of creativity in particular

and social theory in general? Do we need a new framework, a new way of thinking which makes social theory more "up to date" with contemporary conditions of modernity? Can we move on to this new type of thinking without abandoning or "unlearning" previous ways of thinking? Which are the main obstacles or "habits of mind" which have to be adjusted, modified or at least rethought?

Time and Space

In his book **Inventions. The Care and Feeding of Ideas**, Norbert Wiener suggests that the emergence of new ideas are dependent upon the broader climate of society. He mentions the political climate, the social climate, the intellectual climate and the technical climate. The latter is particularly important, as the current state of technology in surrounding fields opens or closes gates. Technological creativity in one particular sphere never appears in isolation, but is dependent upon the level of creativity achieved as well as the type of creative activities going on in the rest of society.

A case in point is Leonardo da Vinci, whose intimate knowledge of the laws of aero-dynamics brought him very close to constructing flying objects (gliders, helicopters). The problem was that the renaissance lacked the technical knowledge of how to provide the material (light-weight metal), which had not been invented yet, metallurgy lagging far behind other areas of engineering.

Thus da Vinci's invention had to wait several hundred years, until the industrial revolution made it possible for society to provide the necessary materials for a flying object.

Information technology from one point of view immensely enlarges the variety of technical possibilities for invention. By making global information almost instantaneously available to creative individuals, the process of learning and innovation is drastically shortened in time while the dimension of space is at the same time immensely enlarged. This particular combination of shrinkage of time and enlargement of space, seems to be the greatest challenge for creativity in the contemporary world. It might also explains the uncontrolled chaos of the current global social order, which has not yet learned how to cope with this new globalized condition for creativity, which is here whether we like it or not.

It was Giddens (1979) who made sociologists aware of the importance of time and space in the current state of modernity. His account of how time and space influences modernity is not without serious flaws though. More precisely, Giddens seems to suggest that the time/space factor has strengthened the element of "routines" in everyday life. One could reasonably argue the opposite to be the case. The shrinkage of time allowed to learn and be

creative and the simultaneous enlargement of space, for the first time in history creating a global space for creativity and learning, has the (unintended) effect of undermining routines and forcing systems and actors to cope with uncertainty and chaos in a permanent way.Destructuration and restructuration rather then structuration of social interactions seem to be the predominant mode of social life today (Fredriksson, 1995).

A further dimension which has to be looked into more closely is the effect the spread of information technologies will have upon learning in a world where there is simultaneously much less time and much more space. Information technology no doubt helps solve some of the problems. The speed of information transfer, helps shorten the learning process and brings immediate access to far away parts of the globe.

On the other hand the shere amount of information made available, creates a new, previously unknown problem, the possible drowning of systems and actors with information and innovation (Herbig & Kramer, 1992).

It might be that the main challenge in the future is not immediate and faraway accessability of knowledge provided for by the new informational technology and all the possible synergetic effects achieved in the interfaces of different thought-systems, but rather the opposite one, of how not to lose ones direction on the road.

Although creativity involves an element of playful activity, a "fooling around" with ideas, the exponentially growing access of such a mass of information might turn out to be overwhelming and create the opposite reaction, resistance to innovation not only by consumers but by the creators themselves. One possibility is doing as one always has done, that is continuing the "standard" procedure of "frog-leaping" between newly discovered literary sources. The other is becoming so enthusiastic about the new possibilities that information gathering becomes a goal in itself. In the first case the possibilities of the emerging access to globalized information are refused. In the latter the endless "prairy" becomes the excuse for a mere "cataloguing" of information, without ever leading to original ideas.

The Problem of Unlearning

Recently the natural sciences have investigated the problem of information overload in terms of the energy envolved (Nørretranders, 1992). According to the second law of entropy, energy of the lower, more "chaotic" order cannot be transformed into higher, more "orderly" energy without energy cost.The production of higher order energy involves spending energy and thus lower order energy is reintroduced, although indirectly.

A century ago Maxwell had found an ingenious way of solving these limitations

through a thought-experiment, shocking the scientific world. A demon placed inside a box could sort out the molecules thus creating higher order out of chaos gratiously. Maxwell imagined a box, containing molecules freely floating around. The inside of the box was cut in the middle by a wall, but a small hole was left open for the molecules to pass. This hole could be shut and left open again with the help of a small sliding door, manipulated by a demon placed inside the box. By observing the molecules floating around in the box closely, the demon could easily separate them, letting all the faster ones move into one side of the box as they approached the small hole and stopping the slower ones, by shutting the sliding door just in time.

The paradox remained unsolved well into the second part of the twentieth century. Several solutions were suggested, but the most convincing one was the following simple idea: The demon couldn't have done it the way Maxwell suggested. Collecting the information necessary to separate the molecules in itself requires energy, but what requires even more energy is the job of throwing the information away. The shere effort of trying to keep himself informed of the unpredictable course of the molecules, would quickly drown the demon in too much information, unless the demon was able to get rid of most of the information he had assembled.

A possibility would be to try to find some elegant formula which helped him to predict the next move of the molecule (s). But this type of throwing information away would cost energy too, as the demon would have to work himself through different solutions. Thus, the second law of termo-dynamics hadn't been overruled after all.

The idea that the main problem for creative thinking in an information-satiated society is the ability to throw information away, is restated by the foremost Swedish thinker on creativity Sven Fagerberg, who suggests that the main obstacle for new thinking is old thinking or ingrained habits of mind (Bierstedt & Bjurvall, 1981). First we have to clear the ground before we can start anew.

This idea is sometimes contested in the literature. Shils (1984) suggests that creativity depends upon previous traditions. Without previously accumulated knowledge we are doomed to rediscover the wheel. This is a valid observation, but it abstracts from the sociopsychological resistance which can be expected in the process of establishing a new "paradigm" (Kuhn, 1970). Although social change and learning hits at the very core of the human experience, never the less, innovation is often resisted by the involved actors, this resistance more often than not coming from previously acquired habits of mind (Watson, 1972, Nichols, 1983, Husén, 1986, Maaz, 1991). Learning can thus only come about if it is preceded by unlearning, that is throwing old information away.

Social change disturbs habitual routines and expectations and is resisted due to the fear of chaos or lack of orientation (Ogburn,1966, Ogburn & Nimkoff, 1950). This subjective

or social-psychological dimension should be put more into focus if we want to understand how social learning processes come about. Actors and systems often tend to invest existing arrangements with deep symbolic meaning. As this investment is closely related to life-biography, identity and self-worth, a certain "clinging" to an old reality which has inevitably disappeared can be expected, at least on an emotional level (Marris, 1985, Maaz, 1991).

Knowledgeability and Uncertainty

What makes disorder or chaos creative? This problem can be approached both on a "system"-level and from an "actor's" point of view.

The collapse of communism suggests that some systems are inherently better equipped to cope with chaos than others. Luhmann's system theory, emphasizing the concept of "autopoiesis" (Luhmann, 1984, Bolz, 1992, Merkel, 1994) might possible serve as a point of departure. On the other hand, the experience of the post-communist countries, in particular the "model" case of the GDR (Offe, 1994, Wiesenthal,1994, Reissig, 1994), suggests that the functioning of a system cannot be abstracted from the particular competencies, values and "rational choices" of actors. These do not necessarily have to be "complementary" to the "functional prerequisites" of the (new) system, but can on the contrary, have their own logic, which might be quite different from the one "asked for" by a totally new system (Glaessner,1991, 1993, Reissig, 1993,1994).

Introducing the social learning approach of contemporary innovation theory, might help us to overcome the traditional antithesis between these two dimensions of sociological explanation and analysis. Both on the system level and the actor's level we are basically asking what kind of learning processes are taking place and in particular the ability of the system as well as the actors to cope with uncertainty in a more or less disorderly manner.

Social learning processes can only come about if we acknowledge in advance that society is not fully ordered, that not everything can be predicted. Learning in this sense, starts in the moment we accept that we are not as "knowledgeable" as we would like to be. The "knowledgability" of actors are important and necessary for everyday routine behaviour and are thus a prerequisite for the social order as Giddens (1984) emphasizes. But not everything in social life can be reduced to social order, and it is a fact that often actors are not fully "knowledgeable", they lack knowledge due to the simple fact that the knowledge required doesn't exist yet.

The assumption of the "knowledgeability" of actors corrects those versions of social theory, which tend to eliminate the element of "rational choice" in social action. But not even

scientists do always know what is the correct or most rational thing to do. They disagree, partly because their knowledge is rooted in different value-systems, partly because the given state of knowledge just doesn't allow us to make accurate predictions. The latter was certainly the case when communism collapsed. This event came as a great surprise to most social scientists (Hollander, 1993, Mayntz, 1993, Fairbanks, 1993). It was only after the phenomenon had become an established "social fact", that the social scientist community began the difficult task of explaining a non-predicted event (and trying to sort out why it had not been predicted in the first place).

We should thus be aware of not "overstating" the case of the knowledgeability of actors. This knowledgeability can more or less be assumed to be the case when we are talking about "routine" knowledge, that is everyday knowledge necessary for actors to be able to cope with recurrent problems which are of more or less the same type. The point is that we cannot always assume this to be the case. There are different kinds of knowledgeability, some of which can be assumed, some of which cannot.

How do actors cope with a social context where routine procedures and acquired social skills and competences are no longer adequate? Such situations are much more frequent than we tend to admit, still they happen all the time under the conditions of modernity. There is often a clear social "need" for a certain type of knowledge or skill, but the latter doesn't exist yet, it has first to be created. Which means social actors, have to fumble more or less in darkness. This was more or less the case in medicine before say penicillin was discovered as a cure against tuberculosis and other similar diseases (Hall, 1993).

Most observers of the current processes of "transformation" going on in Eastern Europe, admit that lack of (previous) knowledge makes their job extremely difficult. Due to the "unique" or "unprecedented" type of transformation taking place (Brzezinski, 1993, Glaessner, 1994, Offe, 1994, Merkel, 1994) the knowledgeability of actors is greatly reduced and thus choices tend to become less "rational".

It cannot be otherwise, for the simple reason that actors first have to acquire the necessary knowledge, that is they have to go through a social learning process. Social actors tend to become wiser, they learn from their own mistakes, just as scientists do. The latter are in principle not different from "lay" actors, they are both in the process of becoming more knowledgeable (Mouzelis, 1993). The difference lies in the degree of sophistication of learning.

Actors learn either directly, through their own mistakes, or indirectly, through advances in the world of science and technology. But in both cases, the point is that we do not know in advance. Science would be useless if we knew the answers we were looking for. Science and any society which depends to such a large degree upon science as contemporary modern societies (Böhme & Stehr, 1986) basically stumbles in darkness as do "lay" actors in

everyday life.

It is therefore not enough to declare the "knowledgeability" of actors as a necessary prerequisite for the functioning of social systems. Unless we accept the far more radical thesis, that lack of knowledge or "uncertainty" is an even more fundamental fact of modern social life (Ewers & Nowotny, 1987) sociology will not be fully equipped to cope with the fundamental challenge of modernity.

In fact it could be argued that modernity, by removing previous certainties, intensifies creative learning processes to a degree previously unknown in history. The collapse of communism and the difficulties of transformation in Eastern Europe can indeed be seen as the belated end of an increasingly outdated political certainty, mediated through the marxist-leninist idea of a party knowing the direction of history in advance and a paternalistic state, relieving individuals from existential worries related to the future.

It seems to be a wide-spread myth that science increases certainty. Even Einstein seems to have been caught up in this myth to a degree, where he emphatically, to the end of his life, resisted the "uncertainty theorem" discovered by Heisenberg, claiming that "God doesn't play dice with the universe" (Clark, 1971). The whole communist movement can to a certain degree be said to rest on this popular myth, transformed to an increasingly ritualized doctrine. The fact that "scientic socialism" misses the very point of science, its experimental and hence open nature, was a point made already by Popper in the forties, but resisted until the bitter end. Today, this misuse of scientific authority is openly admitted by the ex-communists in the former GDR (Sabath & General, 1994, Falkner & Hubner, 1994) but not in the full sense, that is, one is not to yet prepared to ask whether the socialist experiment itself has proved that there must be something "wrong" in the original theory that is in marxism itself (Gouldner, 1980).

For these ex-communists the social learning process has only begun. This "ideological anachronism" is, as many observers (Glaessner, 1991, Scheuch, 1991, Offe, 1994, Mathiopolous, 1994) have noted, one of the distinctive aspects of the German "Sonderweg" in the transformations in Central and Eastern Europe, closely related to the problems of unification.

Social learning can only come about if we feel somewhat unsecure and if we accept a certain degree of uncertainty. This very attitude, as the American psychoanalyst Bion emphasizes, is extremely difficult to enter though, even under fully modern conditions. As biological organisms, we seem to be more attuned to repetitive acts and unbroken routines rather then the opposite (Marris, 1985, Giddens, 1991) and we naturally tend to resist unsecurities and a disordered, uncertain future (Ogburn,1966, Ogburn & Nimkoff, 1950). Which is why modernity in one sense feels like an artificial construct. We have to overcome our instinctual resistance to mental readaption and we naturally feel irritated when certainty

evades us and we are presented with a problem where we are left in darkness, as illustrated by Bion's evasive "alpha"-symbol (Bion, 1992).

On the other hand, accepting that such learning processes in- deed do take place, helps us better to account for the "missing" link between theories which one-sidedly emphasize the "objective" or the "subjective" aspect. Social learning is at one and the same time a "subjective" and an "objective" process. Subjective in the sense that new competences are acquired, accompanied by increased self-confidence as the actors learn to master a new environment (Ewers & Nowotny, 1987^], thus establishing a certain "control" over chaos (Bolz, 1992). Objective in the sense that new social structures emerge (firms, organizations, states, systems) which are better equipped to cope with uncertainty and turbulence in more or less chaotic social environments.

Human Nature and Social Learning

Creative activity and social learning in a fundamental way tells us an important truth of human nature, what it is and why it constantly evolves into something different.

It was V.Gordon Childe who in **Man Makes Himself**, suggested that human nature cannot be defined in terms of needs. Although many sociologists and social psychologists have tried to base a theory of humanity and the social order on a particular need (physical, material, emotional, the need for autonomy and self-fulfilment etc.) or a given "hierarchy" of such needs, the most salient feature of (socialized) human nature seems to be its infinite ability to adapt or "learn" from experience.

Social Man (and this is how our species appears from the early beginnings, involved in more or less well-ordered social interactions) is foremost a "learning" creature and this is the main reason why the human species has been able to survive and multiply in the most shifting circumstances (geographical, climatological, ecological etc).

We are the foremost "learning" creatures of all living species. It is this biologically acquired ability to learn, adapt and innovate, which makes us into what we are. Which means that humanity in the precise sense of the world transforms itself all the time, as do individuals, although to a much lesser degree as the life-time of an individual only encompasses a few generations. On the other hand, it is often the innovative actions of individuals, working in local contexts, which brings about social change in a global context, thus forcing the great majority to adapt while at the same time allowing individuals and small groups or nations to have a distinguishable imprint upon humanity and history.

For Giddens (1991) this general problem of adaptability and innovativeness or

creativity is not a human constant, a problem of humanity solved in an evolutionary context. It is rather seen as something imposed upon us by modernity or "high modernity". The "real" humanity is defined somewhere else, in what is stable rather then what changes or rather in the anthropological need for emotional stability, out of which societies and the social order originates. This is why even modernity and the self-transformation of individuals in the end is treated as a subsidiary phenomenon, as is creativity. Whatever creative potentials we find among human beings, these are always subordinate to the needs for emotional stability.

In his book **Social Change** Ogburn outlines a model which can help us to understand why some of us have great difficulties of adapting to new situations. Such a model only makes sense though if the assume that the most fundamental dimension of individuals and societies is the fact of learning, adaptability and innovation. Why outline our resistance to learning, if the ability to learn was not an innate tendency in humanity itself? Which means that we present such models partly as "abberations", partly as part of a "dialogue" in order to remind other fellow human beings of who they are and that nature has endowed them and only them with this unique ability to transform themselves into something different.

Given such an intellectual context, it becomes reasonable to discuss the various factors which Ogburn lists in his emerging model of "cultural inertia", such as the power of tradition, habit, social pressure, forgetting the unpleasant and psychological conservatism. Ogburn focuses on the cultural sphere of resistance, as he assumes that all or rather most important changes originate from technological inventions. He doesn't discuss the problem of where technological inventions come from in the first place, if human resistance to change and innovations is all there is to it.

In a way Giddens' theory of structuration could be interpreted as an attempt to ground Ogburns "conservative" model of why social change is naturally resisted in an anthropology of basic human needs. He is not the first one to have made such an attempt. The idea that the human and social sciences should foremost be occupied by the problem of predictability and order, rather then explaining the opposite, unpredicted events and disorder, always leads social theorists to search for constant human needs, rather then accept the obvious fact of human adaptability and learning as the "transcending" dimension of human nature, allowing it to change itself and society permanently and in a myriad of intricate ways.

Milan Kundera once gave novelists the advice that someone who thinks himself wiser then his invented characters should choose another profession. In the same spirit, I would suggest that the basic mistake of the social scientists has been to believe themselves wiser than social actors. The inventive capacity of humanity is so rich that whatever the social scientists have to say about it can only be a bleak copy of what is going on around us everywhere. This doesn't make such copying or "simulations" unrewarding, on the contrary. As the emerging science of artificial intelligence or "cognitive science" has shown, by constructing simplified

models of the "real" thing (in this particular case human consciousness and the human mind), we learn to understand ourselves a little better (Leiber, 1991).

Social science, as science in general are basically in the business of the "Socratic" enterprise of increased self-understanding or self-reflection, we are not out there to replace the social actors.

Human Needs and Social Change

It is not obvious to me that we need a special theory, helping us to make sense of why individuals and societies sometimes resist social change. The factors enumerated by Ogburn and others, speak for themselves, we don't need an additional theory of human needs. That is why I have always been sceptical towards the idea of a "pyramid" of human needs as the one proposed by Maslow or in Giddens case, a very narrow version of such a theory, focusing on the need for emotional stability only (ignoring other possible needs such as the need for physical security, material goods, social status, self-realization etc.).

The problem with all such pyramids or narrow versions are that they look very nice when presented as pure, abstract models, but that they collapse under the weight of actual human adaptability in history and the social facts of creativity and learning under the conditions of chaos. The obstacles for social change, enumerated by Ogburn, are real but they are mostly temporary and not inevitable. Maslow's pyramid makes as little sense in an extermination camp as does Giddens' theory of the centrality of emotional needs. If all human needs are denied, only creativity and learning remains (Buber-Neumann, 1988). Although it is important to stress those elements of bureaucratic routine which made Holocaust possible (Bauman, 1991), it is perhaps more interesting to ask how the bureaucratic routines could be "bended" for the sake of saving human lives (Keneally, 1993).

Moreover, these routines didn't appear out of the blue, they were in themselves more or less "ingenuous" solutions to a problem which when it reached the bureaucracy in question had not been clearly defined yet, but evolved "gradually", through the process of trial and error. Although used for purely "destructive" purposes, it is impossible to deny the element of "creative chaos" and "social learning" involved in the process which led to the "Final Solution".

Giddens' theory, emphasizing the quest for ontological security no doubt gives us one important clue to what makes totalitarianism so seductive for individuals (Erikson, 1968). Orwell's powerful description of a closed society in **1984**, very accurately describes a social order where power and stability originates out of a systematic denial of the human need for

"ontological security" or "trust".

This need can only be legitimally expressed as a kind of unbounded love towards a friendly, recognizable face ("Big Brother") which is transformed into a unique symbol of protection in a basically unfriendly world where your own precious world is constantly surrounded by evil forces whom you fear and hate in a state of frenzied horror and fascination. Due to the highly personalized relations between the citizens and the leader, such states always face severe legitimacy crises as the leader dies. Only then do people gradually become aware of the immense degree of manipulation to which they have been subjected.

But contrary to Giddens assumption that the quest for "ontological security" is conducive to routinized behaviour and social structuration, totalitarian dictatorships proves that the opposite might be the case. Stalinism (the "personality cult"), although a full-scale manipulation of the need for "ontological security" (Medvedev, 1973) was the very opposite of routinized social activity. It can best be described as a highly chaotic reality which had the intended as well as manifest effect of actually increasing creativity and learning. One could in fact argue that "Stalinism" was the "functional equivalent" for the creativity and learning which normally occurs in democratic, market-oriented societies, due to their rather "loose" organization structure, allowing for a certain kind of "controlled chaos" (Bolz, 1992).

Precisely because the communist regimes tried to eliminate chaos altogether, through a "planned economy" and a "one-party"-system, they had to "reintroduce" chaos in society, in order to make its system competitive.

This chaos-substituting, creativity-enhancing effect of Stalinism has largely been neglected in the literature, which has instead emphasized its conspicuously "inhumane" character. But the immediate effect of respecting human rights in a planned economy is not more, but less creativity. Because a planned economy is inherently uncreative, it either has to be forced to become creative by "artificial" means (physical and/or ideological terror) or replaced by a social order which admits a certain element of chaos in its midst.

The latter is in fact the road taken by the East Europeans countries but more or less rejected by the Asian Communists, who pursued the stalinist option, up to the very point where they decided to exchange the previous, "artificial" and highly arbitrary form of chaos (stalinist dictatorship) with a more "natural" and better "controlled" one (a capitalist market economy). It was thus paradocially because the East Europeans entered into a drawnout post-stalinist phase, that they are today much less prepared for the inherent chaos of a market economy than are say the Chinese or the Vietnamese, who have tumbled more or less directly from one type of uncertain and chaotic system into another.

Marx and the Dilemma of the Creative Individual

Creativity and learning is a type of activity which transcends the traditional anti-thesis between objective and subjective experiences. It should rather be seen as an ongoing process, with a dual nature (as emphasized by Giddens), but a process, where a certain lack of disorder is inherent in the learning process itself. Trying to eliminate this disorder disturbs the learning process and diminishes the motivations and incentives for creative activity, to the degree where the very survival of the system is endangered. The dilemma of such a system is though that it cannot admit the need for radical restructuring, as this would put its very reason for existence in danger.

This dilemma is illustrated by the case of the GDR. Many of the invqlved actors have pointed at the paradox that although the regime were facing serious problems in 1989 in almost all fields, manifested in rapidly rising dissent with the way the state was run by the ruling party (Bahrmann & Links, 1994) and the virtual explosion of the amount of citizens who wanted to leave the country (Hirschmann, 1993) the political leaders in stead of addressing these issues, became more or less "speechless" (Schabowski, 1991). As the "reformers" inside the party at long last succeeded in ousting the "conservative" leadership of Honecker, it was already too late. Things had run out of control and no matter what the reformers did, the party was quickly losing whatever authority it had left.

In a desperate move to turn the trend, new travel regulations were hastily presented for an increasingly impatient public, causing the Wall to fall. The next weeks we saw the curious "Exodus" of millions of East Germans who had never been outside a "socialist" country before. This sudden and massive confrontation with the smoothly run and bountifully equipped "capitalist" Federal Republic in a surprisingly short time produced a massive swing in popular will (Stolpe, 1992). Politically this meant the end of the GDR and the socialist experiment, which the great majority of citizens of the GDR had no wish whatsoever of giving another chance. They had seen another "future" then the false one proclaimed by its own state and ruling party during forty years and as this one seemed to "work", it would be plain stupid not to accept the offer given by the political class of West Germany to "join the club".

Only a few dissident intellectuals and the communists were against and this was hardly enough to stop the historical change taking place (Scheuch, 1991, Glaessner, 1992). The question raised afterwards remained though. Could the "landslide", that is the rapid desertion from the idea of a separate East German state, seen as a "socialist" alternative to West Germany have been avoided, had the reformers inside the party acted in time and introduced political change before it was forced to do so by events out or their control? The minimum version would be, could some of the socialist traits or "Errungenschaften" of the GDR have been preserved and brought into the united Germany, as a kind of "dowry" into the political

marriage of the two different systems, or were the two systems, as Honecker had proclaimed as different as "fire" and "water" (Honecker, 1994)?

This question brings us to the very heart of the Marxist utopia. Although this is seldom how Marx is presented in the literature, I would suggest that Marxism can be seen as a social theory which "inner meaning" can only be decoded if we allow the fact of the central role the problem of creativity plays in his theory. Marx never explicitly speaks of creativity but his emphasis on "alienation" and "alienated labor" (Fromm,1978, Ollman, 1977, Swingewood, 1977) indicates a great interest in the problem. For Marx, the ideal model of non-alienated work is always a creative individual, a person in full control over the process as well as the means of production but most of all a person who is allowed to use his imagination in a playful, creative way.

In Capital, Marx illustrates what he means by non-alienated labour by picturing an architect, in Grundrisse he mentions a composer. Marx seems to rely heavily on Schiller's book on aesthetic education, emphasizing the role of "free play" in creative activity. Schiller was basically a romantic, and by emphasizing the element of free play and aesthetic pleasure, he was participating in creating the myth of the artist, which Marx seems to have accepted to a certain degree. What is highly significant in this romantic myth of the artist is the denial of the elements of uncertainty, chaos and learning (Beardsley, 1977). The artist according to the romantic view was seen as a "born Genius", he had not become an artist through a difficult learning process but was from the beginning endowed with a "divine gift". It was the duty of the artist to pursue an artistic career and not a difficult personal choice, the start of a long process of transformation of self.

What this myth of "divine Gift" hides is the very real uncertainty of an artistic or creative career and the element of chaos involved in the creative process. The element of uncertainty is related to the highly profane problem of being able to support oneself and ones family while pursuing a creative, artistic career. This was far from a trivial problem, as illustrated by several of the born Geniuses at the time. Mozart as we know died in utmost poverty due to difficulties in finding a reliable patron. Goethe had better luck, his patrons turned out to be more reliable, but this patronage was also bought at the cost of his artistic freedom (Bruford,1962). This dilemma of the creative individual is already present in the case of the supposedly "universal genius" Leonardo da Vinci. A recent biography (Bramly, 1991), reveals that Leonardo developed his habit of trying everything only partly out of a natural curiosity. More often then not, he was desperately speculating upon how he could make himself more useful for a potential patron whose particular needs and wants he was only dimly aware of. Many of his most wild projects should properly be seen as a kind of "presentation of self", inventing a useful "front stage" which would increase the dim chances of future employment.

Although creativity no doubt is subjectively felt as free play in the very moment of creation, there are also some objective problems that have to be taken care of, such as who is going to pay my rent, my food, my clothes, my travelling expenses etc. which I need for creating?

This "existential" dilemma of the creative individual, raised to a symbolic level in Goethe's Faustbooks, indeed feels very modern and we can recognize it as the guiding theme of The German Ideology, the co-work of the young messieurs Karl Marx and Friedrich Engels. The idea of the book is precisely a critique of the romantic tradition of German philospohy, which never bothered looking into the actual conditions of creativity. These were indeed very far from the highly "spiritualized" one preferred by German philosophers writing in the romantic tradition. Where Hegel and his followers, even among the left-hegelians, looked only upon the progress of new ideas in science, art, politics etc, emphasizing creativity as something exclusively taking place inside the "mind" of the creator, Marx and Engels took the liberty of reminding them that in order to enter into a state of high creativity, the nearest to God allowed for humankind, some banal problems had first to be solved, such as the question of housing, food, clothes, etc.

It is important to stress that Marx, although he was later presented as the theorist of and for the working class, was basically an intellectual and that he thought like one (Gouldner, 1974, 1975-76, 1985). Some of the guiding ideas of Historical Materialism were not his own, they were more or less "in the air" in the early nineteenth century. But Marx specific emphasis on the problem of material existence, the need for a kind of patron who could support the creative individual under the new conditions evolving as Germany entered modernity and his specific solution, a paternalistic patron-state, which unreservedly provides the creative individual with ideal conditions is unmistakenly "marxist":

Imagine, says Marx, a situation where the state takes care of everything and where the individual can freely chose what he wants to do. Marx suggests that he might go fishing in the morning, perhaps write a novel in the afternoon and do criticism in the evening. He can do whatever pleases him, there are no restrains what so ever. This is an idealized picture of the everyday life of a creative individual, the kind of life he no doubt would prefer, given the opportunity. Nonetheless, it is not so far from reality, that we do not recognize the originator of this dream, the creative individual himself.

Dream and Reality

As we know, Marx himself came as close as he could to this particular utopia in his own life, at least he tried too, but without a generous socialist state to support him. Instead he got his wealthy friend, the industrialist Engels to function as a substitute, which put both Marx and Engels in a humiliating position. This possibly throughs a new light upon Marx irrational beliefs, pursued throughout his life, that capitalism would soon collapse, a belief shared by Engels. Both probably hated the arrangement but remained prisoners to it, as long as capitalism prospered and no socialist state was willing to take over the burden of supporting Marx and his aristocratic family.

It was not until the Russians occupied the Eastern part of Germany, that a socialist state was finally established. Brecht and many other German intellectuals and artists now saw their chance, at least as the "existential" side was concerned. Their material worries were over and done with. What they had not counted upon and which Marx's historical materialism didn't prepare them for, was the "price" which had to be paid by the creative individual for realizing this dream of the intellectual of the end of existential worry. If we take care of you unconditionally, than you must support us unconditionally. We cannot endlessly help you to be creative, and not get anything in return.

The type of unconditional political loyalty asked for, in fact made the intellectuals ideological prisoners of the socialist utopia. They had to abstain from criticizing the ruling party, since the party was after all the only guarantee that the socialist experiment wouldn't be abandoned and existential insecurity reintroduced. But in a more deeper respect, they were unable to criticize the very ideal of a socialist state, because this ideal was so close to the political ideal of the creative individual.

This "critical deficit" was only one aspect of a social order which systematically denied the possibility of social criticism and more generally the ability of "self-observation" characteristic for the liberal democratic order (Offe, 1994). Its marxist-leninist ideology, assumed that the party had a legitimate right to monopolize power and this fundamental right must not be open to discussion. Neither was the socialist nature of the state, that is the public ownership of productive propery and the planned economy or the right and duty to work etc.

According to Hirschman (1993), the adaptability of an organization (a firm, a party, a state etc.) depend upon the interplay of "Voice" and "Exit". Criticism can thus take two forms, vocal or non-vocal. By closing both these two options, that is denying both the right to leave the country (or even travel abroad) and the right to challenge the wisdom of the party a kind of atrophy set in. Obvious problems were denied since admitting them would be to admit that there was something wrong with the very idea of the superiority of the socialist system. Letting citizens freely leave the country amounted to the same thing. By denying both

of these options, a possible source of innovation and adaption was removed by the system itself, which according to its own logic couldn't live with such an element of "self-correction".

It was thus no wonder that the system ended the way it did. The more it eliminated the possibility of self-criticism, the less it could correct itself. By denying itself the right to speak of what actual reality looked like, it increasingly turned into that rigid and inflexible regime, we associate with the last years of the GDR (Modrow, 1994). What is important to stress is that it was programmed to end this way. The ultimate reason the GDR turned into an inflexible machine which couldn't correct itself, was a mistake in its very construction. This mistake was not introduced by the regime itself, it can be found already in the Marxist utopia.

Socialism, and this should be clear now, was basically a dream, an idealized solution of the dilemma of the creative intellectual, seen through the lences of German idealism. It couldn't possibly work for the simple reason that it simplifies the problem of creativity. By focusing to much upon the life-world of creative individuals, it ignores that creativity cannot eliminate uncertainty of any kind, least of all the existential kind. Existential uncertainty, not knowing what the future is going to look like for me or for the rest of humanity, is the central condition of modernity and trying to eliminate this uncertainty is illusory. So is the idea of a highly planned organization of society, eliminating all the chaos around me.

What happens instead if we try to impose such a vision under modern conditions, is that the power of "self-observation" of society is diminished to the degree, where its "self-correcting" or "self-adaptive" features disappears altogether. This is precisely the story of how the socialist experiment in the GDR came to an end (Reissig & Glaessner, 1991).

Creativity and Modernity

Wilson (1986) suggests that the reason the phenomenon of creativity has largely been avoided by most sociologists, is its reputation of being an "esoteric" subject. It is associated with the realm of the aesthetic and the pleasurable, while the type of issues which concerns sociologists and which we get funded for are more "utilitarian" in kind. Moreover creativity is associated with a kind of "frivolity", which puts the "seriousness" of the sociological enterprise into danger. Sociologists are basically here to destroy the "myths" of society and to illuminate the "dark" sides of modernity which it is the task of sociology to uncover or critically explore (such as "power", "exploitation", "social inequality", "poverty", "anomy", "alienation", "ideology" etc.). A sociology of creativity would be of little use for society, it would lack the "constructive" component of which our profession prides itself, as well as the "critical" one.

One of the things I found when I started looking into the area, mainly by immersing

myself into the life biographies of creative individuals (I have probably read a couple of hundred or so, ranging from literature and the arts to science, politics, entrepreneurship and technology) was that a sociology of creativity allows us to substantiate our claims to be a critical as well as a constructive science. Making room for the creative phenomenon deepens our understanding of the kind of social processes which make some people into winners and others into losers, how social power is executed, how the phenomenon of anomy comes about etc. Far from taking the critical edge out of sociology, bringing the phenomenon in, makes us more aware of the "deep structures" (Gouldner, 1973) of social life.

But these critical/contructive elements enter in a different way from traditional sociology. Sociologist standing on the shoulders of the classical tradition become critical by investigating how individuals are integrated into society and how the social order is "structurated" (either by the system or the actors or by both at the same time). This is still a valid point of view. The problem is that sociology has not moved very much beyond such a way of thinking during the last hundred years. It was born in a very different type of society from the one we see around us today. The contemporary conditions of "modernity" are of another type then the one which existed when Marx, Simmel, Durkheim and Weber outlined the sociological discipline.

In the type of modernity we are moving into, the problem of "integration" cannot be solved in the ways suggested by Durkheim (1964), that is by increasing institutional "differentiation" and "autonomy" on the one hand and "individualization" and "complementarity" in the division of labour on the other. The awkward fact is that in an increasingly globalized division of labour, institutional differentiation and autonomy seem to diminish the chance for the "unlucky" individuals to take part in the process of individualization and complementarity (Reich, 1993). The "losers" become "prisoners" in the systems of "integration", which is more or less "decoupled" from the individualization/complementarity-process of "organic solidarity".

On the other hand, the latter, far from becoming the "iron cage" of rationality as Weber assumed, becomes increasingly unpredictable (Böhme & Stehr, 1986). If it is impregnated by rationality, as Weber suggests, it is obviously a different kind of rationality than he assumed, a rationality which is much more open for surprises and the unknown.

Of the classical sociologists, it was only Marx who tried to combine a theory of creativity with a theory of integration and rationality. As we know his particular solution, a planned economy without private ownership turned out to be a highly flawed solution, containing an error of construction which only became visible after several decades, leading the system to collapse from within. The main reason, it seems to me, was that Marx's concept of creativity tried to eliminate chaos and uncertainty all together, reducing the learning process to a question of raising the consciousness of the masses to the supposed objective truths of

the ruling party, rather then seeing social learning as a basically open enterprise, which had better be left to the social actors themselves.

But this latter option was denied, because it would reintroduce chaos and uncertainty, which was precisely what the marxist project had tried to eliminate once and for all, in the belief that this was the way forward for humanity. The loss of power of self-observation and hence also of self-correction, was therefore built into the project itself. It was not a mistake due to external circumstances or bad leadership, but a fatal mistake of the original idea.

The power of self-observation and self-correction are built into our democratic institutional arrangements, supported by a liberal value-system into which individuals are socialized from early childhood. But sociology alone has made the Socratic task of self-observation of modern societies into its sine qua non. This is the reason why we are here, to add professional fuel into this overall democratic process in which the great majority takes part one way or another.

But this power of "self-observation" has to move out of a "overroutinized" and overly "ordered" concept of society which we find in most social theory, aptly summarized in Giddens theory of "structuration" (Giddens, 1979, 1984). Gidden's evident failure to account for creativity, his eager to explain it away or reduce it to just an "emotional prop" in the quest for "ontological security" (Giddens, 1991) confirms this author in his assumption that the root of the absence of a sociology of creativity lies in the classical formulations of sociology's founding fathers and it is these which have to be rethought, if sociology is to live up to its foremost task of reflecting upon the contemporary conditions of modernity.

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